A Job that took a Million Years

or

THE TALE OF THE CLAM

Being the Story of
A Commonplace Article
With a Most Uncommon History

What this Story is About

Sometimes the most commonplace articles hold intensely interesting stories. Suprisingly little is known about many products with which we come in daily contact.

This booklet tells the story of one of the most interesting of these--LIME. After reading it, you will agree that it is a story well worth the telling.

Few people realize what an important part Lime plays in our daily life. Directly or indirectly, it is used in many different ways for the comfort and convenience of mankind.

It is impossible for us to cover all of the applications of lime but we do want to tell some of the intimate facts about the origin, manufacture, and use of those brands of Lime made by this Company.

These facts will give those who read this story, a better appreciation of our products, while also making it easier for the Dealer to handle and the Plasterer to use them.

This story is written to give helpful expression to facts gained in our experience during sixteen years as manufacturers and distributors of lime, that we may avoid the fate of the clam as unfolded on the following pages.

THE OHIO HYDRATE & SUPPLY CO.
WOODVILLE, OHIO

"The Lime Center of the World"

No. 1—This shows how nature left the job

—except for the two buildings man erected

Beneath the patch of ground shown in the picture above, Nature has for centuries been silently working out the processes of her laboratory. On the pages that follow, and with the aid of suitable pictures, a small part of this story will be told, that each of us may better appreciate some of the things that occur in the great silence beneath our feet.

No. 2—Our first work was to remove the top soil or overburden

ORDINARILY, most of us look upon lime as a very commonplace article. In fact, to many of us it merely means "plaster", and there we let our thoughts stop. But the Creator has endowed each of us with imagination by which even the most prosaic of things can be made interesting. And so, let us call upon our imagination to see if something of more than ordinary interest can not be learned about lime.

Briefly stated, lime is the product derived from heating the raw limestone, or rock, until all carbon dioxide gas (CO_2) has been expelled. And geology tells us that limestone rock is the calcareous deposits of various forms of marine life resembling our present day clam and oyster. These masses of shells and animal remains were stratified and compacted upon the bottom of the sea by the never-ending and untiring action of the water.

Thus Nature has carried on her work for centuries and centuries, a period of years far beyond the comprehension of man. Finally, however, through an upheaval of the earth's crust, these deposits appeared above the sea level as limestone ridges and out-croppings.

No. 3—Meanwhile we began laying the foundation pillars for our plant

No. 4—A partial view of our first blast in which our friend, the clam, was uncovered

No. 5—Here the work is a little farther advanced, with an ever-increasing number of clams in evidence

What Lime Is

From a purely chemical standpoint, there are two kinds, or specia, of limestone. One is made up largely of carbonate of calcium while the other consists of carbonate of calcium and magnesium.

This last described specie, with its high content of magnesium, is known as dolomitic limestone. It is from this dolomitic formation that the best grades of finishing lime are made, this being due to certain local natural physical conditions which scientific chemical experts have failed to accurately explain. It is generally recognized that the Hydrated Lime made from this rock is noted for its whiteness, purity, plasticity and easy-spreading qualities.

Geological surveys have shown that the section in and around WOODVILLE, OHIO is particularly rich in deposits of dolomites. Many thousands of fossils are found imbeded in the rock, of which the Canadensis megalomus is one of the best preserved and most common. Samples of this fossil are shown at the right, which you will notice, bear striking resemblance to the common fresh water clam.

Thus, because of Nature's inexorable laws, the poor defenseless clam, through its innate inactivity, becomes fossilized and buried deep under the earth's surface. Finally, after ages and ages, it comes to light again in the form of dolomites, ready to serve the needs of mankind after first being subjected to a tremendous heat to drive off the carbon dioxide (CO_2).

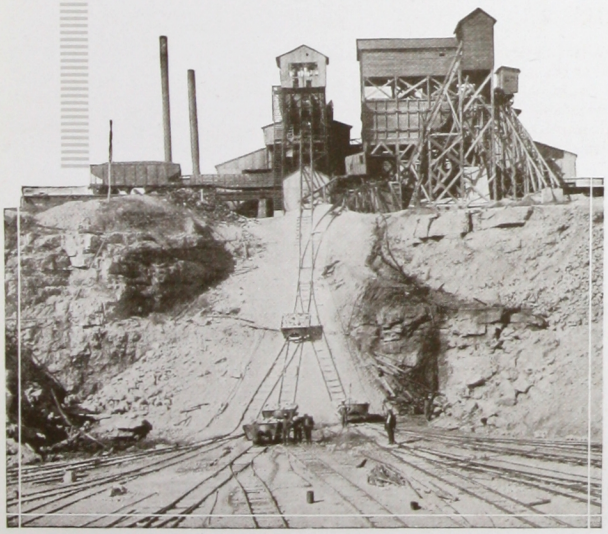
AND now that we have told you something of the source of lime and its relation to the clam, let us give you a brief outline of the journey the clam takes from its centuries-old resting place in the rock, to its final destination in one of our modern structures, or possibly in some one of the many other places where lime is used.

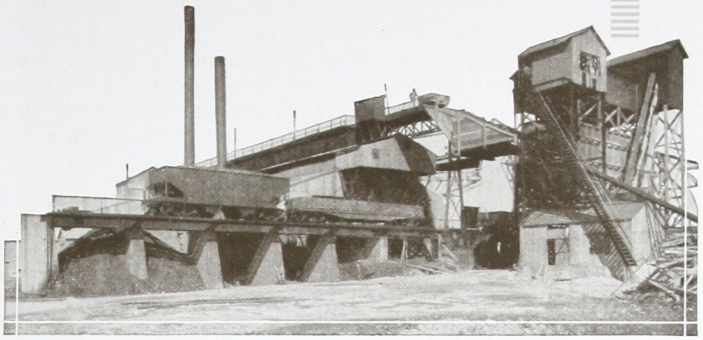
While pictures four and five on the page opposite, give some idea of the initial work in the quarry, a more comprehensive idea can be gained by a study of the pictures at the bottom of pages eight and nine.

One of the first operations necessary in the establishment of our plant, was the removal of the top soil or earthy overburden. This is done to insure a clean product and to prevent any foreign substance from getting into the kilns.

Picture number two on opposite page shows the first wagon load being filled. This work completed and the rock uncovered, the nextstep was the drilling and breaking up of the rock by explosives. The masses are then broken into fragments of about 6″ cubical dimensions, suitable for burning. They are then loaded into dump cars and started on their journey toward the ultimate sack of lime.

The next two steps in the journey are pictured on this page. Below is shown the bottom of our quarry with several cars loaded ready to go up to the kilns, and one car going up the incline on its way to the top.





The picture at the top of the page shows the second step. As the car reaches the top of the incline it is attached to an electric car and hauled to one of the kilns into which the load is dumped for burning.

The man who handles this part of the work can be plainly seen in the upper picture at the extreme top of the trestle. Throughout the entire day his task is to pilot these loaded cars to the ever-burning kilns in order that the stream of finished product may not stop. When it is remembered that the raw limestone must be heated to 1800 or 2000 degrees Fahrenheit to drive off the carbon dioxide (CO^2), one can begin to appreciate the job that confronts the fireman in our immense plant.

It may not be amiss at this point to call attention to the character of our quarry. From the point where the over burden, or surface dirt, is removed, to the extreme depth of the quarry, the rock is entirely free from loam or dirt pockets. It is practically pure limestone producing a like measure of purity in the finished product.

The fine particles of stone, or waste product, which accumulate on the floor of the quarry, and which is too fine for burning, is gathered and sold for chemical purposes, for which it is particularly well suited. The fluxing stone, or raw dolomite, is used in concrete work, road building, etc.

THE picture at top of this page shows one of our four firing floors,—the one shown being the inner side of our oldest battery of 12 kilns. These firing floors extend along either side of the two rows of kilns, each kiln having two firing doors on each side, or a total of four firing doors to each of 24 kilns. It doesn't require much imagination to realize the fuel consumption necessary to bring the kilns to the required degree of heat in order to expel the carbon dioxide from the limestone.

A Partial View of Center Firing Floor

At the extreme left of the upper picture can be seen one end of the inside firing floor for our second row of kilns, while the bottom picture shows the outside firing floor for the new battery of kilns. This new battery of twelve double kilns, added within the last year, will easily bring our daily capacity to 450 tons of Finishing Hydrate.

This means that our output capacity will be equivalent to about fifteen car loads of lime per day, four hundred car loads per month, or nearly five thousand car loads per year, equal to a single train load nearly forty miles long.

And when it is remembered that Ohio Hydrate Lime Products are going into every section of the United States and Canada, one can begin to appreciate the popularity of our product which comes as a direct result of its purity and extraordinary quality.

The firing of lime kilns is carried on very systematically. Our kilns are under fire day and night for a period of eight to twelve months during the year, depending on the life of fire brick lining and business conditions. The furnaces are charged every thirty minutes and the fires are thoroughly cleaned every four hours after each draw. The coal does not come in contact with the stone, but is burned in furnaces on opposite sides of the shaft through which the stone passes, and the flame and gases from the fuel, tempered with steam introduced below the burning coal, is drawn up through port holes into the heated stone where it liberates the carbon dioxide.

This method of flame burning of lime explains why the lime comes out a pure white, free from all ashes and from all taint of coal smoke. Also, this method practically removes any possibility of over-burning so common to the ordinary, old style method.

It is essential that the tremendous heat necessary to burn the limestone, be maintained quite uniformly throughout the burning process in order that all the stone may be properly burned. Only in this way can uniform results be realized, which fact is one reason for the uniform quality of our product.

It is truly inspiring to watch the dumping of the kilns, as explained on the next page, and note the remarkable whiteness and purity of the burned stone. This impression is further intensified as the burned stone passes on into the crusher and through the later processes, where its purity is emphasized at every step.

One Firing Floor for New Battery of Kilns

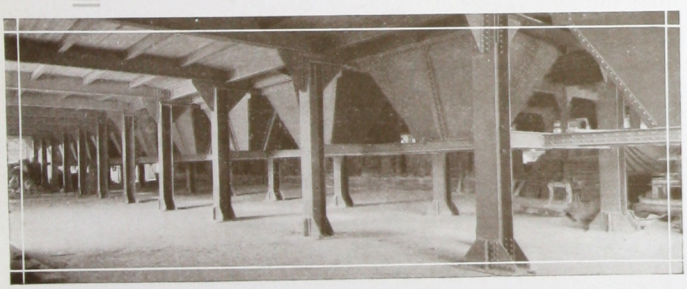
Naturally, where such tremendous heat is required, it is essential that fire precautions be closely observed. For that reason our entire plant is of steel and concrete construction, rendering it as nearly fireproof as is humanly possible. The views on these two pages will serve to emphasize this fact.

ON this page is shown the lime floor—sometimes called the cooling floor—under each of our two batteries of kilns. The kilns are kept filled with stone and a charge of lime is removed, or drawn from each kiln, every four hours, day and night, during the eight to twelve month period the kilns are under fire.

The lime is still hot when drawn from the kilns, but after it is allowed to cool, it is carefully picked over to separate any over-burned or under-burned pieces which may come through. This done, it is carried to the huge crushing machine at the farther end of the cooling floor, by means of an endless pan conveyor.

Burned Limestone on Cooling Floor

As these great heaps of burned lime are picked over, there can still be found many traces of our little friend, the clam. Although thoroly burned to the point of disintegration, he still maintains enough of his original shape to disclose his idenity. But once he reaches the crushing and pulverizing machinery, he loses all identity in the immense mass of similar material which has also been reduced to an almost powdery fineness.



Cooling Floor Under New Kilns

Here is shown the cooling-floor under our new battery of kilns. By comparing this view with the one above, some idea can be gained of the capacity of our plant and the measure of activity that prevails when all these kilns are in operation.

Some Interesting Sidelights on Ohio Hydrate Service

Whether it be the Architect who specifies the product, the Contractor who buys it, the Dealer who sells it, the workman who uses it, or the Owner who ultimately must pay for it, the question of Facilities for Rendering Service, is an important one.

For that reason, the following facts bear direct relation to the remainder of this booklet, in addition to their human interest value.

Our Plant is located only one half mile Southeast of Woodville on the Pennsylvania Railroad. Travelers passing through the town are greeted with views similar to those shown in upper right and left corners of pages eight and nine.

Direct side tracks extend to various parts of our plant, thus giving us excellent shipping facilities. The views shown in upper corners of pages three and eight, show our coal dock and immense coal storage capacity.

At top of the pictures in lower corners of pages eight and nine, is shown one of the homes for our workmen. There are twenty-five homes for workmen situated conveniently to the plant.

Our property extends far to the Southward of the plant, and in a remote corner of our wood lot, is located a commodious brick building which was built for storing large quantities of dynamite.

As mentioned on another page, our plant is equipped with large storage facilities which enable us to handle immense quantities of our product and make prompt shipments of orders.

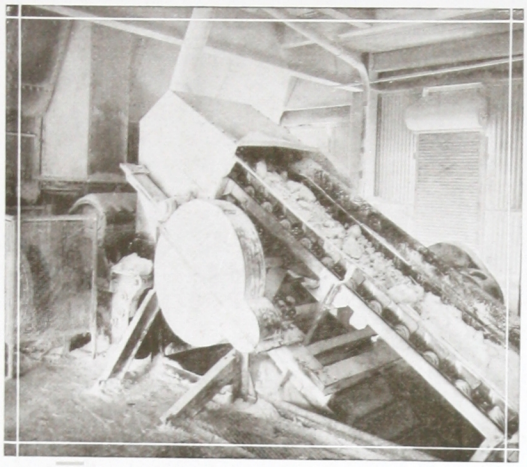
In addition, appreciating the growing need of Contractor and Builder for such products as Keene Cement, White Moulding Plaster, and White Plaster-of-Paris, these are carried in stock in our warehouse, thus enabling our customers to get them in mixed cars with Finishing Hydrate and General Purpose Hydrate in ten pound sacks. This is an important feature in our service and is a distinct advantage to our customers.

Then in our storehouse is carried miscellaneous assortment of supplies necessary to the manufacture of our product, and representing an investment of from $15,000.00 to $30,000.00, all of which serves as additional assurance of steady operations.

While our loading shed shown at bottom of page ten, permits loading in any kind of weather, and most shipments are made in box cars, yet a liberal supply of water proof tarpaulin is carried to insure the proper protection of all shipments.

Thus is briefly told the "Why" of Ohio Hydrate Service.

IT IS at this point that we approach the most interesting part of the entire operation in the production of hydrated lime. From the quarrying of the stone, its transportation to, and charging of, the kilns, its burning, and final drawing out as burned lime seems rather prosaic. But from here on it is found that machines have been made to excel even the dexterity of human hands, for human hands are not again to touch the product until delivered to the ultimate user.

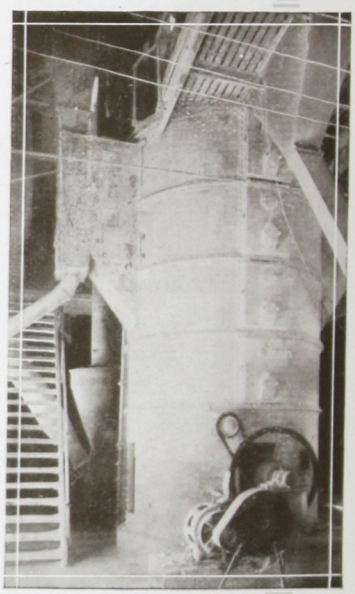


At the left is shown the crusher, which reduces the burned lime to a pulverized state, from whence the ground mass is conveyed into the huge bin immediately behind the crusher. From this bin it goes by screw conveyor to the elevator and thence to a feeding hopper above the Poidometer.

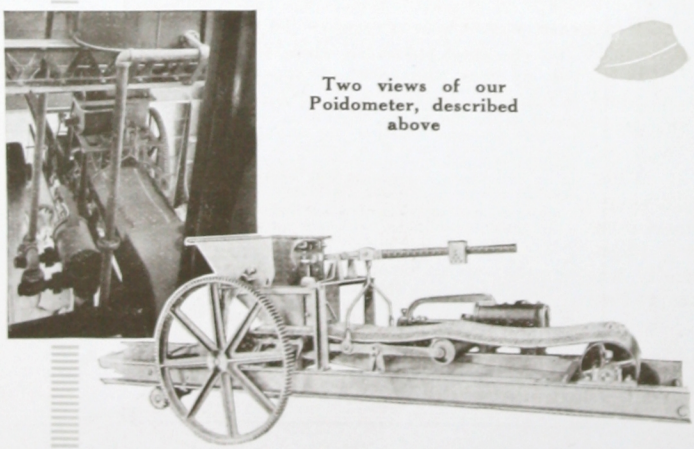
As the lime enters this feeding hopper, it passes on through the Poidometer, which machine measures and weighs the lime with unerring accuracy and precision.

Two views of the Poidometer are shown at bottom of this page, the one view giving a fairly comprehensive idea of how the passage of the lime into the Hydrator is accurately gauged and controlled. The lime passes over the endless belt shown, which belt is operated by an eccentric which also automatically pumps the required amount of water into the Hydrator exactly in proportion to the weight of lime delivered by the Poidometer.

It is the mechanical accuracy of this machine, plus the thoroness of the operation of the Hydrator, which insures the remarkable uniformity of Ohio Hydrated Products.



The Hydrator, where the lime is mechanically slaked with scientific correctness and uniformity



Two views of our Poidometer, described above

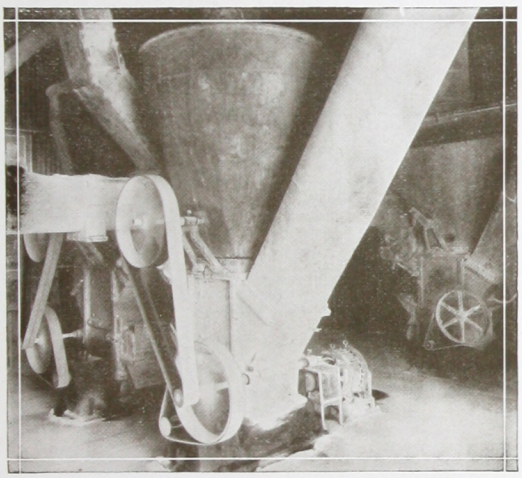
As the lime passes into the Hydrator, it is constantly agitated by huge plows while being subjected to moist steam from which the moisture is absorbed by this mechanical slaking process. Entering the Hydrator at the top, the lime passes over eight levels in the process of hydration, coming out at the bottom completely slaked.

AS THE lime comes from the Hydrator, it is too hot for packing, therefore it is passed over an aerator shown at the right, which cools it sufficiently for further handling.

From the Aerator it passes through the Raymond Mills shown below where it goes through an air separation process which removes even the tiniest particles of over-burned or under-burned lime which may have been carried through the crusher.

Some idea of the thoroness of this machine, can be gained from the illustration at the bottom of this page. The photographer merely dipped his hands into the little pile of residue, and was so surprised and impressed at the result of this machine's work, that he urged us to show this sample as a further proof of the purity of our product, while incidentally showing how such results are automatically realized by means far superior to those possible with human hands.

Way up there in the top is the Aerator which cools the lime as it comes from the Hydrator



This is one of our Raymond Mills which perform such a remarkable service in removing all over-burned and under-burned particles.

It is from this point that huge fans drive the lime through immense spouts, up and over to the storage bins in the bagging department.

After passing through the Raymond Mills, the lime is then forced, by a current of air, induced by rapidly revolving fans, to huge storage bins above the packing room. From these bins the lime is placed in valve bags by means of specially designed automatic machines, as shown in the center picture on next page.

This battery of bagging machines has a capacity of 20 bags per minute, or a total of 24,000 bags per day of 20 hours. And since the standard paper bag holds 50 lbs. of lime, the total shipping capacity of our plant is found to be 600 tons of hydrated finishing lime per day.

From the bagging machines, the lime is either loaded directly into cars, or conveyed into our warehouse for storing. A partial view of our warehouse and loading shed is shown on the following page. This one feature of our equipment is especially important since it enables us to make shipment at any time, regardless of the weather.

Not only are all loading operations protected but further precautions are also taken for the protection of our customers, as explained elsewhere.

Side view of new plant erected in 1921

A good view of our plant and one of the four loading tracks, as seen from scope of our activities as well as our unusual facilities

NEARLY everyone knows the common condition of many freight cars, and their tendency toward general disrepair. To remedy this condition, and to furnish tangible evidence of our conception of service, we maintain a complete crew of men whose time is devoted to repairing cars and fitting them to properly carry our shipments.

In the first place, our product is put up in extra heavy rope paper bags of 10 lb. and 50 lb. capacity, and cloth bags of 100 lb. capacity, in order to reduce loss of breakage in handling. Then we go one step further by lining the sides and bottoms of every car with extra heavy paper for we have found that this precautionary measure does much to prevent a loss of goods to our customers and consequent dissatisfaction.

Advantages of Hydrated Lime

The question is sometimes asked—Why is hydrated lime preferred over lump lime? Several reasons exist for this preference, depending somewhat upon the purpose involved.

The use of lump lime necessitates the aging of the putty or mortar, before it can be used. The use of Ohio Hydrate Lime makes this aging unnecessary because the lime comes to the job already slaked. Guess work and careless workmanship are almost entirely eliminated through the aid of mechanical processes of scientific accuracy which insures the uniform quality of the results.

Then too, Ohio Hydrate Lime is more convenient to handle, hence reduces labor cost to both the dealer and contractor, with little or no danger of waste. It can be stored indefinitely in a dry place with no resulting fire hazard. Because of the method of hydration, it is uniform in quality and is practically free from "core" and overburned particles.

Another very distinct advantage is the elimination of any possibility of "drowning" or "burning" the lime in the slaking process. Such disastrous results are not at all uncommon where the required quantity of water used is a matter of guesswork on the part of the workman.

That is one reason why Ohio Hydrate products are uniformly dependable. Mechanical methods of hydration (or slaking) insures a uniformity of product that is vitally important to the user. It is also well to remember that Ohio Hydrate Products are guaranteed to meet the standard specifications for lime as required by the American Society for Testing Materials.

It is amazing what mere machines can be made to do. exception. The famous Valve Bag is, in itself, qui bagging machines are still more remarkable. A the machine, and in a few seconds the bag is automatically shut off.

Where Our Famous Dolomitic Lime Comes F
Three views which show interesting phases of our progress

seen from our main entrance. This gives a good idea of the
ıal facilities for production and shipping.

Part of new plant with old plant in back ground

THE following analyses of our product, made by E. L. Conwell & Co., Inc. of Philadelphia, Pa. is unusually interesting because of the remarkable purity and quality of our lime as indicated therein.

The Ohio Hydrate & Supply Co.,
Woodville, Ohio

Dear Sirs:

We beg to report analyses of sample of your limestone and sample of your hydrated lime recently submitted by you.

Laboratory No.	7070	7071
Material	Limestone	Hydrated Lime
Silica	.18%	.20%
Alumina	.23%	.22%
Iron Oxide	.07%	.04%
Total Impurities	**.48%**	**.46%**
Calcium Oxide	31.88%	49.46%
Magnesium Oxide	19.68%	31.90%
Loss on Ignition	47.82%	18.14%

Fineness

Passing No. 30 Sieve	100.00%
Passing No. 200 Sieve	98.03%

Soundness

Steam Exposure	OK

Both limestone and hydrated lime show the low content of impurities characteristic of the limestone of Northern Ohio.

The hydrated lime which was marked "Ohio White Finish" complies in detail with the standard specifications for lime of the American Society for Testing Materials.

Respectfully submitted,

E. L. Conwell & Co., Inc.
(Signed) E. L. Conwell
President

made to do. Our bagging machines are no
, in itself, quite an invention, but these
narkable. A bag is placed underneath
ds the bag is filled and the machine
ally shut off.

Lime Comes From—Our Quarry
of our progress in the working of our Quarry

FROM the analyses shown on the preceding page, it will be noted that the total impurities of both our limestone and hydrated lime is less than ½ of 1%. Or, to state it another way, Ohio Hydrate Products are better than 99½% pure.

This is due partly to the natural purity of the limestone rock in our quarry, and partly to our method of manufacture. The net results mean that Ohio Hydrate Products are particularly adapted for use in the last, putty, or white coat in plastering. Merely by proper soaking, as later explained, and then gauging Ohio Hydrate Products with plaster of paris, the white coat can be applied with greater ease and uniformity, and the result will be an unusually white, sanitary wall.

And, peculiarly enough, this same characteristic makes Ohio Hydrate Products particularly well adapted for use in scratch and brown coat plaster work; in stucco and grout; in waterproofing and lubricating concrete mixtures, and in the manufacture of lime paints, glass, grease, rubber, paper, cloth, in tanning processes and various other purposes for which lime is used.

Likewise, this same purity constitutes one of the good reasons why Architects, Contractors, and Builders are specifying and insisting upon Ohio White Finish Hydrated Limes as an assurance of quality results.

Ohio Hydrate Products also hold a distinct advantage for the Dealer in that they make it unnecessary for him to stock and carry the ordinary grades of lump lime and masons' lime. This is because Ohio Hydrate Products are adapted for successful use for all building purposes. The fact that Ohio Hydrate Products will carry more sand than ordinary limes, makes them particularly suited for all kinds of plastering.

Ohio Hydrate Products are marketed under four brands, as shown on this page. All of these brands are made from exactly the same material and are, therefore, entirely uniform in quality.

Another view of our loading shed, showing the complete protection given the handling of our products

These four brands make it possible for us to accommodate more than one dealer in a town on an equal basis and assure to each a Product of the highest Quality.

Where Ohio Hydrate Lime Products Should be Used

Sometimes we are asked for a list of the places or classes of work where Ohio Hydrated Dolomitic Lime can be used advantageously. The easiest answer to the question would be to say "anywhere", but that, of course, is not sufficiently specific. For the convenience of those interested in the subject, the following list is given as representing a general classification of the kinds of work where our products can be used with decided advantage.

A good example of two grades of scratch-coat work with Ohio Hydrate

For White Coating

Every workman likes to feel that he can depend upon his lime for uniform results. Otherwise, much of his care and honest effort is lost through no fault of his own.

The following simple instructions regarding the preparation and use of Ohio Hydrate Products for White Coating are given to make it easy for the plasterer to get both a uniform mixture and uniform results.

First of all, it is important that a clean, tight soaking box is used. Pour the water in the box, then dust the lime into the water, being particular to see that sufficient water is used to satisfy the thirst of the lime. This is the only way by which the full lubricating or plastic qualities of the lime can be brought out successfully. When the proper quantity of lime has been put in the water, let it soak from 10 to 24 hours, depending upon the quantity prepared, without agitating the mixture. When thoroly soaked in this manner, it is ready for use on the board.

After it is placed on the mixing board, hollow out the center and sprinkle water therein, then add from 15% to 20% plaster of paris, or calcined gypsum. After mixing thoroughly it is ready for spreading on the wall.

There is another important feature about Ohio Hydrate White Finish that is worthy of consideration.

If you were to closely examine with a microscope the white coating in which any Ohio Hydrate White Finish Product had been used, you would find it filled with minute pores. Peculiarly enough, these pores play a very important part in the successful acoustics of a room. Although too small for the naked eye to see, yet they are large enough to break up and absorb the sound waves, preventing any rebound which is the reason for the echo nuisance where this porosity does not exist.

Another distinct advantage realized is in the permanency of the walls which affords a like degree of permanency in the decorations. If white coated walls are allowed to stand undecorated for at least one year, this permits the building to settle so that any cracks which may result from the settling, can be properly filled and allowed to harden. The result is a perfectly smooth, white wall, capable of being made permanently beautiful because of the corresponding permanency of Ohio Hydrate White Finish Limes.

Sample of plaster work spread over metal lath, with last coat of Ohio White Finish

M. E. Church, 9th & Mass. Ave.,
Washington, D. C.

Howard Theatre,
Atlanta, Ga.

Home Savings & Loan Bldg.,
Youngstown, Ohio

Building No. 14
General Electric Co., Erie, Pa.

On this and following pages are shown pictures of various types of buildings and miscellaneous construction work where Ohio Hydrate Products have been used with remarkable success.

Ohio Hydrate in Scratch and Brown Coats

The uniform quality and unusual plasticity of Ohio Hydrated Lime have made it an important factor in high grade interior plaster work, regardless of the number of coats to be applied.

There can be no question but that mechanical hydration by the process previously described in this booklet, is bound to produce a product of wonderful fineness and remarkable uniformity. Naturally such a product will be reflected in the quality of work in which it is used, for, after all, that is the real test.

On the preceding page appears an illustration which clearly shows a typical example of scratch or brown coat results through the use of Ohio Hydrate Lime. This picture graphically shows the quality of results which can be produced when Ohio Hydrate Lime is used for scratch and brown coat work.

As a matter of fact, there is no kind of interior plaster work where Ohio Hydrate Lime plaster does not excel. It can be used on all kinds and grades of material with better results, in acoustics, light, sanitation, appearance and life of the wall.

Exterior Stucco Work

The use of Ohio Hydrate Lime as an admixture to cement greatly improves exterior stucco work because of its unusual plasticity and "fatness". This characteristic makes it possible to cover the metal lath with less pressure than is required for ordinary stucco mixtures.

In like manner is the efficiency of the mixture increased for use on wood lath because of the liberal "key" produced. Then too, the plasticity or workability of the mass aids in effecting a complete "fill" in every crack and crevice. The monolithic surface thus produced prevents any absorption of outside moisture. Naturally this adds greatly to the lasting qualities of the stucco work.

Auto Sales Bldg.,
Atlanta, Ga.

An interior view
Stacy-Trent Hotel,
Trenton, N. J.

Stacy-Trent Hotel,
Trenton, N. J.

Another interior view of
Stacy-Trent Hotel

Walker Apartments,
Washington, D. C.

Cleveland Worsted Mills,
Cleveland, Ohio

Western Electric Co. Bldg.

The Coca-Cola Co., Atlanta, Ga.

Water Tight Concrete Work

The addition of Ohio Hydrate to any concrete mixture in the proportion of 5 to 10% of the weight of the cement used, renders the mixture much easier to handle. The plasticity of the lime lubricates the mixture, making it mix better, pour easier, and runs into the forms and around the reinforcing much more evenly and uniformly, making it possible to attain a clean, smooth, finish.

Then too, the increased density of the mass, resulting from the use of Ohio Hydrate Lime, renders the concrete work practically water tight, hence far more permanent. This applies to the many kinds of concrete work which are becoming increasingly popular with contractors and builders as they become more familiar with the improved results made possible through the use of Ohio Hydrate Lime.

Lime-Cement Mixtures

Portland Cement Mixtures are greatly improved through the use of Ohio Hydrated Dolomitic Lime. It possesses certain lubricating properties which facilitates the movement of the mixture through the chutes as well as aiding in its handling.

It also acts adhesively, holding the mass together, thereby preventing a separation of the sand and stone from the cement. In other words, the addition of Ohio Hydrated Lime renders the mixture more plastic, easier to handle and easier to spread, which alone effects a saving in labor.

Then too, the same qualities which cause the greater plasticity, tends toward a closer contact in the mass with the result that the density of the mixture is increased and its resistive powers greatly multiplied. It is because of this peculiar characteristic that cement mixtures in which Lime is used, are much denser and far less liable to crack.

Portland Cement Mortars can be produced much easier and cheaper through the use of Ohio Hydrated Lime. Not only does it make the mixture easier to handle, but it also does away with the labor ordinarily required to slake the lump lime.

It can readily be realized that the use of a mortar of such plasticity will naturally allow the brick, stone, tile or other material, to become more firmly imbedded. This of course, produces a compactness which obviously must add strength to the entire work. Likewise does this same characteristic tend to make the work more water tight, while also making it possible to work the material in low temperatures when ordinary cement mortar could not be safely handled.

Residence, Captain Roper,
Atlanta, Ga.

Residence, Mrs. Phillip F. L.
Engle, Atlanta, Ga.

Porte-cochere, Residence
Howard Candler,
Atlanta, Ga.

Another view of Candler
Residence

Apartment House,
Washington, D. C.

Mortar

The detailed information already given regarding the advantageous characteristics of Lime in construction work, will enable Contractors and Builders to readily appreciate the advantage of its use in making all kinds of mortar. Workers have been surprised to notice the greater ease with which mortar can be handled after Ohio Hydrate Lime has been added. The increased workability and adhesive qualities of the mass makes possible the highest measure of results, both as regards appearance and permanency.

Another Indianapolis
Apartment

Spink Arms Apartment,
Indianapolis, Ind.

Cold Water Paints

Here is a field where Ohio Hydrate Limes are becoming increasingly popular. Contractors, Builders and Owners are rapidly coming to realize the great benefit and advantage possible in the use of cold water paints for many purposes, but particularly as a sanitary measure. The powdery fineness of Ohio Hydrate Lime, plus its other chemical characteristics, make it peculiarly suited for use in this manner. Its plastic qualities naturally increase its adhesiveness which is always the chief requirement for the realization of permanency and lasting results.

New Laboratory Bldg.,
Bureau of Standards,
Washington, D. C.

E. Parker Motor Co.,
Atlanta, Ga.

Some Interesting Facts About Ohio Hydrate Products

It is almost impossible for one to fully comprehend the powdery fineness of our lime. 100% of it will easily pass through a 30 mesh screen, while 97% of it will pass through a 200 mesh screen. When it is remembered that the latter means 40,000 openings to the square inch, one can begin to realize its fineness.

Basically, the reason for this unusual quality is largely due to the natural character of our limestone. It is quite apparent from a study of geological facts that the stone in our quarry was preserved by the action of water during the prehistoric period. Not only was the mass formed under tremendous water pressure, but the water kept it successfully sealed throughout the ages, thus retaining its full chemical value.

Northwest Chemistry Bldg.,
Bureau of Standards,
Washington, D. C.

Anstell Residence,
Atlanta, Ga.

Buick Salesroom,
Atlanta, Ga.

Part of a Group of about 500 Homes for General Electric Co. Employees, Erie, Pa.

Red Cross Building, Washington, D. C.

Main Building, Chevy Chase School, Washington, D. C.

Black-Maffett Auto Sales Room, Atlanta, Ga.

A further appreciation of this fact can be gained from a consideration of the following: While analysis shows our lime to be somewhat similar to other limes, yet, because of its natural physical properties, it produces an entirely different working product. Our Finishing Hydrate Lime is exceedingly "fat", or plastic. That is why it spreads so easily and smoothly. It has been proven that the workmen on the job can do more work with Ohio Hydrate Lime than can be accomplished with products of almost the same chemical analysis from other sections.

It is because of these facts that we persistently maintain the economic advantage builders and contractors can realize through the use of Ohio Hydrate Limes. Nature has favored us with a remarkably valuable deposit of rich dolomitic limestone and it is our duty to pass along the blessings of this rich gift, that others may enjoy them to the fullest of their abilities.

An Innovation

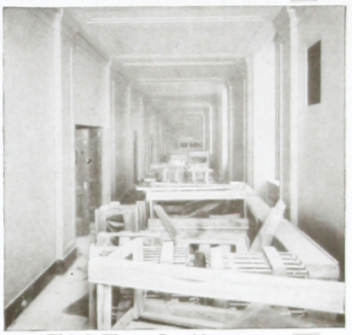
A careful study of the lime situation has disclosed the need for a smaller package to meet the requirements of a miscellaneous list of users. As a consequence, we began packing our product in a ten pound valve bag package, as shown on next page.

This small package enables the workman on the job to use one bag of Ohio Hydrate to one bag of cement for effective waterproofing. This eliminates all guess work and makes possible a mixture of exactly the proper proportions for the realization of successful results.

In addition, this ten pound package furnishes a convenient form of dispensing lime for all general purposes, particularly for household use. Attached to each bag is an envelope containing a booklet which gives a list of the many uses of lime in and about the home. This booklet explains the many household uses, gives directions and formulae for whitewashing, fertilizing, disinfecting, spraying, plastering, egg packing, making lime water, and numerous other household uses.

Dealers will find this new package a wonderful help in interesting the average householder in the efficient and timely use of lime because it supplies a limited quantity of a most dependable product in a very convenient form.

Cleveland City Auditorium, Cleveland, Ohio



Third Floor Corridor on East Side of Cleveland City Auditorium

Right section of Arena, Cleveland City Auditorium

North End Lobby Entrance, Cleveland City Auditorium

Comparatively few people realize the many uses where lime can be effectively employed to their direct advantage. The making of white wash, or cold water paint, is a common use, and yet it could be far more widely used if its advantages were better understood. Not only does it serve to lighten dark basements, etc., but it also renders such places more sanitary and useful.

Lime may also be used effectively in basements and cold storage warehouses for keeping down dampness. A little lime sprinkled in the home refrigerator is also helpful in keeping it sweet and odorless.

The Innovation
Our New 10 lb. Bag

Broad Street Bridge, Columbus, Ohio
Designed and Built by The Carmichael-Cryder Co., Engineers and Contractors, St. Louis, Mo.

What It All Means

In the first analysis, the true significance of this story depends upon its relation to the reader and how it affects his welfare. This is true whether he be Architect, Builder, Contractor, Dealer, Plasterer or Owner,

No matter in which of these classes you belong, you like to feel sure that you can get the service you desire.

The Ohio Hydrate & Supply Co.,
Woodville, Ohio

Gentlemen:—

"We used something like one million pounds of your Hydrated Lime in the construction of the Broad Street Bridge, Columbus, Ohio, and found it uniform in quality.

We have used your Hydrated Lime for years as integral waterproofing in many structures, including several reinforced concrete buildings in Mexico City of which we were the designing engineers as well as the builders. Aside from the fact that it undoubtedly reduces porosity, the noticeable lubrication which it gives to the flow of concrete when handled in cars, chutes or pipes, is a distinctive advantage to the contractor.

We also constructed the Scioto River Weir at Columbus, a crescent shaped dam across the river near the Broad Street Bridge, in which your Hydrated Lime was also used under the specifications of the city."

The Carmichael-Cryder Co.
By H. M. Cryder

And that term service has a multitude of meanings. Not only does it comprehend the quality of the goods made, but also includes such things as promptness of shipment, uniformity of product, regularity of performance, dependability in emergencies, co-operation when needed, practical helps as applied to your problem in connection with the use of our products, and throughout it all, a general understanding and appreciation of needs, plus an alertness to duty which ever and always is expressed in that coloquial term "on the job".

The Architect appreciates that brand of service, for it helps to make his own efforts more fruitful. The Builder appreciates it for its dependability, and the Contractor is impressed for a like reason. The Dealer is even more enthusiastic for he realizes the futility and ultimate disaster of depending upon any lesser measure of service.

As for the Plasterer—a man too often overlooked—it means a decided help in his work, for few men there are who work with their hands, but glory in the accomplishment of a job well done! Therefore, the least we can do is to help him with dependable materials.

—And Why

Such is the Service which constitutes our daily endeavors and here are the facts which contribute to a successful achievement.

The finest quarry of raw dolomitic limestone in Ohio—99½% pure; a new modern steel and concrete, fireproof factory containing twenty four double kilns, and equipped with the latest and most approved machinery; a daily production capacity of 450 tons of finishing lime; special facilities for loading cars under cover, regardless of the weather; storage capacity for two thousand tons; a thoroly trained and competent force of experienced workmen who take pride in making only good lime; executive officers in close touch with the plant, insuring prompt and reliable attention to orders under all circumstances and easy response in emergencies; and last, but not least, an organization which appreciates its duties and responsibilities and is glad for the privilege of doing its part in the upbuilding and expansion of American Business.

The Ohio Hydrate & Supply Co.
Woodville, Ohio
"The Lime Center of the World"

A Just Acknowledgement

It is all well for one to say "See what I have done", but when analyzed, it is invariably found that many helped.

Therefore, while justly proud of the progress we have made, we are also glad to point with appreciative pride to the loyal support given us by the following firms whose products and efforts contributed their respective parts to the construction of our plant.

Engineering and Hydrating
Schaffer Engineering & Equipment Co.
Pittsburg, Pa.
Engineering and Erection of Building
Massillon Bridge & Structural Co.
Massillon, Ohio
Machinery and Equipment
Webster Manufacturing Co.
Chicago, Ill.
Air Separating & Grinding
Raymond Bros. Impact Pulverizer Co.
Chicago, Ill.
Bagging Machinery & Bags
Valve Bag Company of America
Toledo, Ohio
Motors
Lincoln Electric Co., Cleveland, Ohio
Ideal Electric Co., Mansfield, Ohio
Allis Chalmers Co., Milwaukee, Wis.
Air Compressors
Ingersoll-Rand Co., New York City
Hoisting Machinery
Lidgerwood Co., New York City
Castings and Machinery Work
Multiplex Concrete Machinery Co.
Elmore, Ohio
Stone Handling Machinery
Barber Green Co., Aurora, Ill.
Electric Drilling Machinery
The Loomis Machine Co., Tiffin, Ohio
Screening Machinery
Stevenson-Adamson Co., Aurora, Ill.
Refractories
Harbison-Walker Refractories Co.
Pittsburg, Pa.
Pyro Clay Products Co., Oak Hill, O.
Boilers
Gem City Co., Dayton, Ohio
Erie Steam Boiler Co., Erie, Pa.

A Word to Dealers

In the foregoing story of the little clam, there is a moral which every Building Supply Dealer should remember.

Continued silence and lack of animation finally results in ossification. He who stands silent and shouts not for his wares, is soon forgotten.

In time, his own silence superinduces a drying up and hardening process, like unto the experience of the clam. And while Nature has seen fit to provide a way whereby the innocent clam can yet serve mankind, the human clam might not be so kindly favored.

It is far better that all of us should raise our voices to proclaim the character of our goods and the quality of our service, that our fellow-men may benefit thereby in the present here and now.

Therefore, be proud of the goods you have to offer. If you can't be proud of them, get a brand you can be proud of,—then persistently tell your story to the world. Under no circumstances keep silent. Remember, a clam eventually becomes a fossil.

Don't be a Clam.

The CLAM may lead a quiet life, yet the plasterer's art is a lasting tribute to the clam's consistency